IN THE CLAIMS:

Please amend Claims 24, 26 and 27 as shown below.

1 to 3. (Canceled)

4. (Previously presented) The method according to claim 24, wherein the grid positions corresponding to each dimension are set the same.

5. (Previously presented) The method according to claim 24, wherein the input data is expressed in one of RGB, CMY, and XYZ color spaces.

6. to 23. (Canceled)

24. (Currently amended) A color conversion method of converting three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals, the method comprising the step of performing interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein the interpolation processing comprises the steps of:

obtaining weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

u' = INT(((X-X0)/(X1-X0))L),

v' = INT(((Y-Y0)/(Y1-Y0))L),

w' = INT(((Z-Z0)/(Z1-Z0))L),

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

determining a relationship among the weight values (u', v', w');

calculating a value of the output data (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'≥ v', P=((L-u')P000+(u'-w')P101+(w'-v')P110+v'P111)/L,

when w'≥ u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'≥ v'≥ u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'≥ u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'≥ u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and

~~when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,~~

~~when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,~~

~~when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,~~

~~when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,~~

~~when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and~~

displaying a color converted image represented by the output data.

25. (Previously presented) The method according to claim 24, further comprising the steps of:

setting grid positions of the tree-dimensional look-up table; and

generating X-u', Y-v', and Z-w' tables to obtain the weight values (u', v', w') in the obtaining step.

26. (Currently amended) A data conversion apparatus for performing color conversion processing on three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals, said apparatus comprising a processor arranged to perform interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein said processor comprises:

an obtainer, arranged to obtain weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

u' = INT(((X-X0)/(X1-X0))L),

v' = INT(((Y-Y0)/(Y1-Y0))L),

w' = INT(((Z-Z0)/(Z1-Z0))L),

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

a determiner, arranged to determine a relationship among the weight values (u', v', w');

a calculator, arranged to calculate a value of the output data (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'≥ v', P=((L-u')P000+(u'-w')P101+(w'-v')P110+v'P111)/L,

when w'≥ u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'≥ v'≥ u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'≥ u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'≥ u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and

~~when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,~~

~~when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,~~

~~when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,~~

~~when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,~~

~~when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and~~

a display, arranged to display a color converted image represented by the output data.

27. (Currently amended) A computer-readable storage medium storing computer-executable instructions causing a computer to perform a color conversion function of converting three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals, the color conversion function including performing interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein the interpolation processing includes:

obtaining weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

u' = INT(((X-X0)/(X1-X0))L),

v' = INT(((Y-Y0)/(Y1-Y0))L),

w' = INT(((Z-Z0)/(Z1-Z0))L),

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

determining a relationship among the weight values (u', v', w');

calculating a value of the output data (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'≥ v', P=((L-u')P000+(u'-w')P101+(w'-v')P110+v'P111)/L,

when w'≥ u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'≥ v'≥ u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'≥ u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'≥ u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and

~~when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,~~

~~when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,~~

~~when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,~~

~~when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,~~

~~when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and~~

displaying a color converted image represented by the output data.

28. (Canceled)

29. (Previously presented) The method according to claim 24, wherein the color converted image is displayed by using a printer.

30. (Previously presented) The method according to claim 24, wherein the color converted image is displayed by a monitor.